

Using Logistics Data

Forecasting

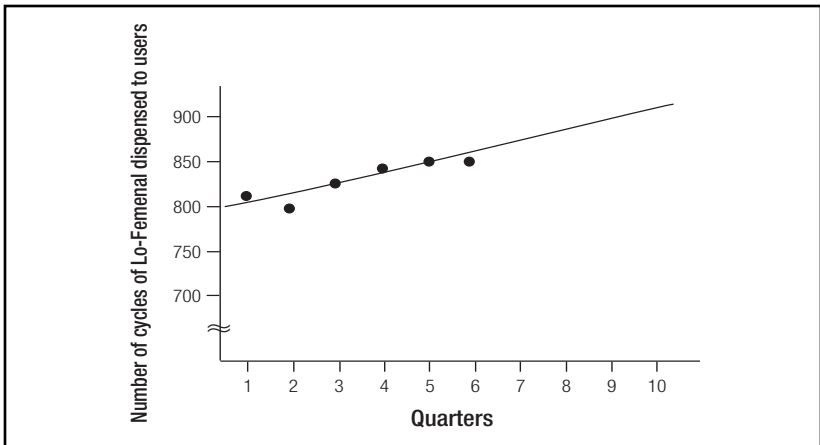
You may find it useful to analyze your data on contraceptives dispensed to users to look for trends and to make a forecast to plan ahead. Although official contraceptive forecasting for a family planning program is usually done at the central level, outlet staff can benefit from doing their own forecast, particularly if demand is changing. Even if you don't do a complete forecast, it can be useful to examine trends in contraceptive use. Increasing demand for contraceptives could mean that the outlet may have to arrange for more contraceptive storage space or more service delivery space, hire more service providers, or make other adjustments.

To do a simple outlet-level forecast, follow these steps for each contraceptive method (and for each brand or formulation if you dispense more than one):

- ➡ Collect all your data on the number of contraceptives dispensed to users (for example, 810 cycles of Lo-Femenal® dispensed in Quarter 1, 792 dispensed in Quarter 2, etc.)
- ➡ The more data you have, the more accurate a picture you will have. If you are doing a forecast by year, try to have at least 3 years of past data; if you are doing a quarterly forecast, have at least 6 quarters of data.
- ➡ For each contraceptive, plot on a graph the amount that was dispensed to users for each time period (year or quarter).
- ➡ See if you can detect a trend. (If you are doing a quarterly forecast, you may see a seasonal trend.)
- ➡ If you see a basically linear trend (i.e., when the points are connected, they form a fairly straight line), continue the line in that same direction into the future, up to the point for which you are making the forecast.

- ➡ Look at the date in the future for which you are making the forecast, and see where the projected line intersects it. If you are looking at quarterly data, this point refers to the amount to be used in one quarter; if annual data, the amount used in one year.

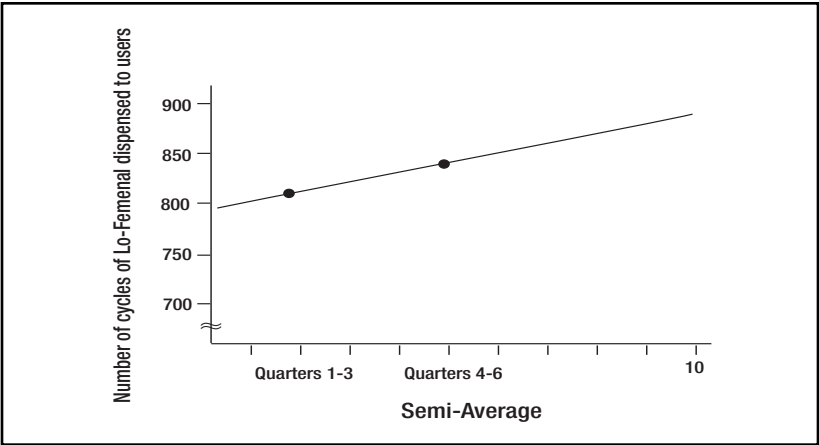
The following figure shows a forecast based on six quarters' worth of data.



The figure indicates that by the tenth quarter, the outlet may be using almost 900 cycles of Lo-Femenal® per quarter.

Unfortunately, dispensed-to-user data rarely fall neatly into straight lines. If there is no linear trend, use the ***semi-average*** technique:

- ➡ Divide the data into two equal time periods and calculate the average for each period.
- ➡ Plot these two points on the chart, connect them with a line, and continue that line to the right.



This figure also indicates that by the tenth quarter, the outlet may be using almost 900 cycles of Lo-Femeral® per quarter.

With any of these techniques, you must also consider what factors might cause a change in the lines' directions. Future demand could be affected by current or future events, such as campaigns advocating more long-lasting contraceptive methods, an increase in condom use for HIV prevention, or new providers offering contraceptives or services. Looking to the past, if the program experienced any stockouts, then use of the stocked-out contraceptives would have been lower than actual demand. In this case, you may wish to estimate what use would have been if there had been enough supplies, and use that figure instead.

The farther into the future a forecast is made, the less accurate it is likely to be, so you must do new forecasts periodically.

Once you make a forecast, keep it and refer to it. Your estimate of future use is just a guess; you have to monitor the actual use to see how accurate your estimate was. If there is a significant difference from your estimate, try to figure out why. What could you have known that you didn't know? What happened that you might have anticipated? What happened that you couldn't have anticipated? Is the discrepancy large enough that you may need to modify your forecast and future orders?

Couple-Years of Protection

Couple-Years of Protection (CYP) is a tool for looking at data on the quantities of contraceptives that have been dispensed and estimating how many clients (or couples) those contraceptives served. CYP is sometimes used to evaluate a program or to set targets. It can also be used to analyze a clinic or program's method mix.

CYP translates products into people; if one couple would need 4 doses of injectable contraceptive in a year, then 8 doses of injectable dispensed are equivalent to two couples, or two CYPs.

Family planning outlets may wish to take their dispensed-to-user logistics data (i.e., how many of each kind of contraceptive were dispensed in a year) and estimate how many CYPs were provided. Standard CYP calculations are presented in the table on the next page; they allow for conditions such as lost and damaged supplies and early removal of IUDs and implants. Your program may wish to use different conversion factors based on local practices or conditions if you have accurate data on usage rates.

How to Calculate Couple-Years of Protection (CYPs)		
Contraceptive Method	Factor	Description
Pills (cycles)	÷ 15	15 cycles per couple per year
Condoms (pieces/units)	÷ 120	120 units per couple per year
IUDs (pieces/units)	× 3.5	On average provides 3.5 years of protection
Injectables (vials/doses) Depo-Provera® Noristerat®	÷ 4 ÷ 6	4 units per couple per year 6 units per couple per year
Norplant® (units)	× 3.5	On average provides 3.5 years of protection
Sterilization (procedures)	× 10 (Asia, Latin Am.) or 8 (Africa, Near East)	On average provides 10 or 8 years of protection

In the example below, a clinic has taken its dispensed-to-user data for the previous year and analyzed its method mix.

Contraceptive method	Units dispensed	CYPs	% method mix
Oral Contraceptives	750	50	24.4
Condoms	3,000	25	12.2
IUDs	16	56	27.4
Injectable (Depo®)	144	36	17.6
Norplant®	5	17.5	8.6
Sterilization	2	20	9.8
Totals		204.5	100

CYPs can also translate people into products; if you have an estimate of how many people you will serve, you can calculate how many contraceptives you will need. To do this, use the numerical factors in the table on the previous page, but for pills, condoms, and injectables multiply the factor instead of dividing. For example, if you plan to provide 100 couples with pills, multiply 100 by 15. For IUDs and Norplant®, no multiplication is necessary because the number of couples becoming acceptors of these methods is the same as the number of IUDs or Norplant® sets that would be required for that year.

Common Logistics Problems, Probable Causes, Possible Solutions

The following table presents five common logistics problems along with their probable causes and possible solutions.

Problem	Probable Causes	Possible Solutions
Undersupply	Poor forecasting	Improve the data used for forecasting.
	Inaccurate or incomplete counts of products on hand	Review inventory control procedures (i.e., record keeping and inventories).
	Seasonal increase in product use	Adjust order amounts or issue amounts for seasonal variation.
Oversupply	Poor forecasting	Improve the data used for forecasting.
	Inaccurate or incomplete counts of products on hand	Review inventory control procedures (i.e., record keeping and inventories).
	Seasonal decline in product use	Adjust order amounts or issue amounts for seasonal variation.
	Decline in use due to client preference	Train staff to deal with side effects and rumors, or adjust forecasts if trend continues.
	Same product is now available from other sources	Improve coordination with other programs; investigate why clients use other sources.
Damaged Stock	Improper handling	Give feedback to warehouse staff; increase supervision to improve handling procedures.
	Improper storage	Review policies on proper storage of supplies; increase supervision of storage; repair or renovate storage facilities; reduce product exposure to light, water, chemicals, and pests.

Problem	Probable Causes	Possible Solutions
Expired Stock	Oversupply	(See solutions for oversupply, above)
	Failure to use oldest product first	Use First-to-Expire/First-Out procedures; improve warehousing practices.
	Accepting products at or near expiration date	Implement a policy that products must have a minimum shelf life remaining when they are received.
	Not used because of deterioration of packaging	Improve storage procedures; use damaged items for training; implement policy not to receive damaged products.
Stock Records Disagree with Physical Inventory	Incorrectly recorded receipts and issues or faulty arithmetic	Take greater care in recording entries and in computations; simplify forms and records; conduct refresher training for staff; obtain calculators.
	Tardy entries of transactions	Encourage prompt entries and checking of all transactions.
	Use of improper accounting units	Implement policy that everyone uses the same units (e.g., cycles of pills, not cartons).
	Failure to conduct physical inventories frequently enough	Ensure that inventories are conducted periodically.
	Same product stored in different locations	Consolidate all of the same product in one location.
	Theft, pilferage	Improve security.

